

FIG. 1

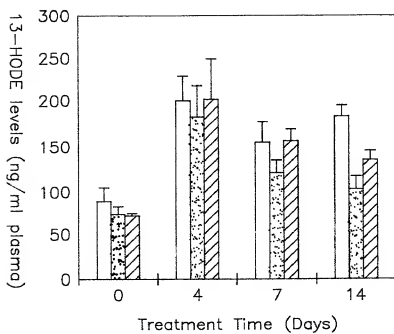


FIG. 1A

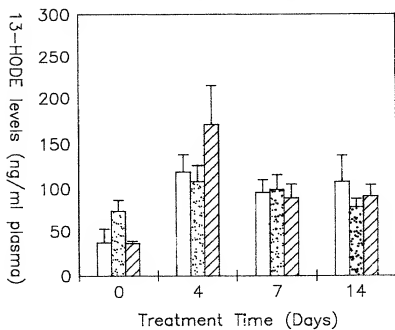


FIG. 2

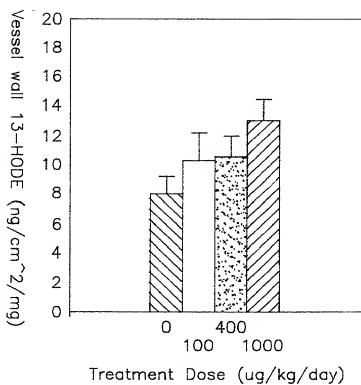


FIG. 2A

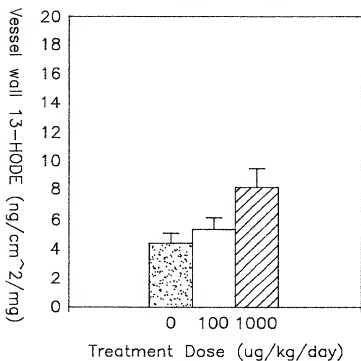
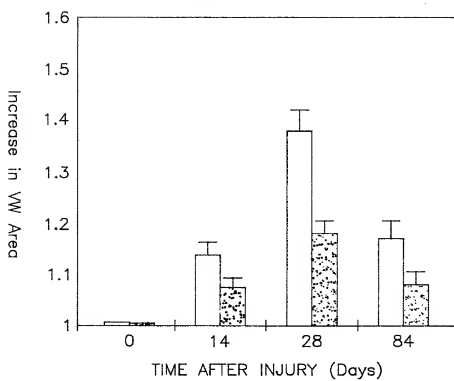


FIG. 3



09833257.112101

FIG. 4

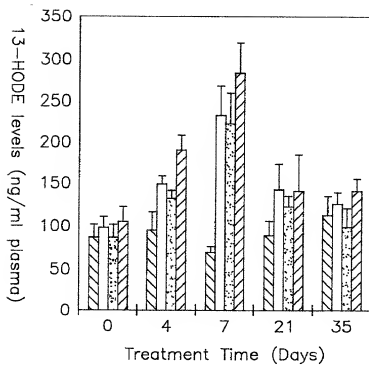


FIG. 4A

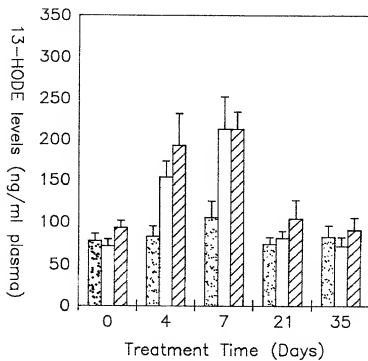


FIG. 5

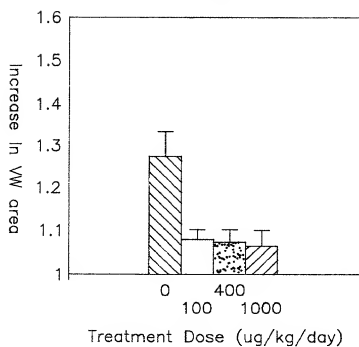


FIG. 5A

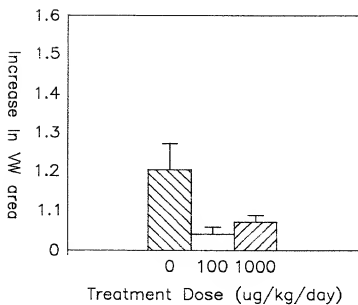
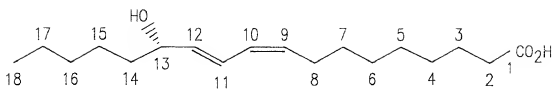


FIG. 6



Proton nmr spectrum (270MHz; CDCl_3)

$\delta(\text{ppm})$ 6.5(1H, dd, $H_{11}, J_{11,10} = 11\text{Hz}, J_{11,12} = 15.2\text{Hz}$), 6.0(1H, t, H_{10} , $J_{10,9} = J_{10,11} = 11\text{Hz}$), 5.7(1H, dd, $H_{12}, J_{12,11} = 15.2\text{Hz}, J_{12,13} = 6.8\text{Hz}$), 5.4(1H, dt, H_9 , $J_{9,8} = 7.7\text{Hz}, J_{9,10} = 10.8\text{Hz}$), 4.1(1H, m, H_{13}), 2.4(2H, t, H_2 , $J_{2,3} = 7.3\text{Hz}$), 2.2(2H, m, H_8), 1.6(4H, m, H_3, H_{14}), 1.3(14H, m, $H_{17}, H_{16}, H_{15}, H_7, H_6, H_5, H_4$) and 0.9 (3H, t, $H_{18}, J_{18,17} = 6.7\text{Hz}$).

Carbon-13 nmr spectrum (67.8MHz, CDCl_3)

$\delta(\text{ppm})$ 179.3(C_1), 135.6(C_{12}), 132.6(C_9), 127.8(C_{10}), 125.8(C_{11}), 72.9(C_{13}), 37.1–22.4($C_{17}, C_{16}, C_{15}, C_{14}, C_8, C_7, C_6, C_5, C_4, C_3, C_2$) and 13.9(C_{18}).

Infrared spectrum

3500–2500 cm^{-1} (broad O–H stretch) and 1709 cm^{-1} (C=O stretch)

Ultraviolet spectrum (ethanolic solution)

$\lambda_{\text{max}} = 232\text{nm}$ ($\epsilon \approx 25,000 \text{ mol}^{-1} \text{ dm}^3 \text{ cm}^{-1}$)

Soluble in ethanol, dichloromethane

Insoluble in hexane, water.